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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

|                                |   |                                        |
|--------------------------------|---|----------------------------------------|
| In re Application of:          | ) | AMENDMENT AND RESPONSE TO PAPER NO. 5  |
| Bender                         | ) | MAILED 05/30/03                        |
| Serial No.: 10/007,310         | ) |                                        |
| Filing Date: November 30, 2001 | ) | Date Mailed: <u>September 24, 2003</u> |
| Attorney Docket No.: JB-301    | ) |                                        |
| Title: PULSED BLACKBODY        | ) | Examiner: HOEY, Betsey Morrison        |
| RADIATION FLUX                 | ) |                                        |
| ENHANCEMENT                    | ) | Art Unit: 1724                         |

Commissioner of Patents and Trademarks  
P.O. Box 1450  
Alexandria, VA 22313-1450

AMENDMENT AND RESPONSE TO PAPER NO. 5 MAILED 05/30/03

Dear Sir,

Applicant is in receipt of Paper No. 5 mailed 05/30/03. Thank you for your continued expedient examination of the present Application.

STATEMENT OF CLAIMS STATUS

Claims 1-20 are pending.

Claims 1-20 are rejected.

## SUMMARY OF RESPONSE

### *Detailed Action:*

1. *Examiner States:* " The drawings are objected to because the labeling is not uniform (appears to be handwritten). A proposed drawing correction or corrected drawings are required in reply to the Office Action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance."
2. *Examiner states:* " Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 1, "the UV reactor" and "the oxidizing species" lack antecedent basis. In claim 1, there is also a lack of nexus between the electromagnetic radiator and the UV reactor. Claims 4 and 11 appear to recite method steps, but are dependent on a system claim and do not limit the structure of the system ( see MPEP § 2114). In claim 12, "the...main filter membrane" lacks antecedent basis. In claim 19, "the electromagnetic energy" lacks antecedent basis. Care should be given to use consistent terminology in the claims, and to provide antecedent basis whenever "the" or "said" is used as an article before an object of a limitation in the claims. The claims not mentioned as having specific errors are rejected because they depend on either claim 1 or claim 12."
3. *Examiner States:* " Claims 1-20 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office Action."
4. *Examiner states:* " The following is a statement of reasons for indication of allowable subject matter: Claims 1-11 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, because the prior art of record fails to teach, disclose, or fairly suggest a system with enhanced water flux through a filter membrane comprising an electromagnetic radiator capable of producing high-power, pulsed blackbody, deep-ultraviolet radiation; a UV

reactor having a fluid inlet, fluid outlet, and at least one treatment chamber; an a filtration membrane disposed adjacent the electromagnetic radiator to filter the irradiated water; wherein the system elements are arranged such that treatment, as described in claim 1, reduces transmembrane pressure. It is submitted that while other systems for water treatment comprise the combination of UV reactor(s) and membrane filters, the prior art of record does not obviate instant claims 1-11 because the prior art of record fails to recognize the advantages of including an electromagnetic radiator capable of producing high-power, pulsed blackbody, deep-ultraviolet radiation has over conventional mercury UV lamps in a filter membrane system. Claims 12-20 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, because the prior art of record fails to teach, disclose or fairly suggest a method for enhancing water flux through a hollow-type filter membrane comprising exposing water to be filtered to pulsed blackbody, deep-ultraviolet electromagnetic radiation prior to purifying the water with the filtration, in order to prevent fouling of the membrane by organic molecules, metal ions, or complexed minerals. It is submitted that while other methods for water treatment comprise the combination of UV radiation and membrane filtration, the prior art of record does not obviate instant claims 1-11 because the prior art of record fails to recognize the advantages of including a step of exposing the water to be filtered to pulsed blackbody, deep-ultraviolet electromagnetic radiation prior to filtration. Pages 9-10 of the instant specification describe the advantages of this step over conventional radiation by mercury UV lamps in a filter membrane system."

5. *Examiner states:* " The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure."

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